

ABSTRACT OF THE DISCLOSURE

The genomic structure including the sequence of the intron/exon junctions is disclosed for *KVLQT1* and *KCNE1* which are genes associated with long QT syndrome. Additional sequence data for the two genes ARE also disclosed. Also disclosed are newly found mutations in *KVLQT1* which result in long QT syndrome. The intron/exon junction sequence data allow for the design of primer pairs to amplify and sequence across all of the exons of the two genes. This can be used to screen persons for the presence of mutations which cause long QT syndrome. Assays can be performed to screen persons for the presence of mutations in either the DNA or proteins. The DNA and proteins may also be used in assays to screen for drugs which will be useful in treating or preventing the occurrence of long QT syndrome.